

IN THE CLAIMS

Please cancel claim 36 as follows.

1. (PREVIOUSLY AMENDED) A semiconductor film, comprising:
a silicon substrate; and
a graded gallium nitride layer deposited on the silicon substrate having a varying composition of a substantially continuous grade from an initial composition to a final composition.
2. (ORIGINAL) The semiconductor film of claim 1, wherein the graded gallium nitride layer is deposited using metalorganic chemical vapor deposition (MOCVD).
3. (CANCELLED)
4. (PREVIOUSLY AMENDED) The semiconductor film of claim 35, wherein the graded gallium nitride layer is deposited by changing a vapor pressure of the supply of at least one precursor in a growth chamber for the graded gallium nitride layer.
5. (PREVIOUSLY AMENDED) The semiconductor film of claim 35, wherein the precursor is gallium, aluminum or nitrogen.
6. (PREVIOUSLY AMENDED) The semiconductor film of claim 35, wherein the graded gallium nitride layer is deposited by changing a parameter of the growth chamber for the graded gallium nitride layer.
7. (ORIGINAL) The semiconductor film of claim 6, wherein the parameter of the growth chamber is a total pressure, a temperature of the substrate, a total flow, a rate of substrate rotation or a reactor wall temperature.

8. (PREVIOUSLY AMENDED) The semiconductor film of claim 35, wherein the graded gallium nitride layer is deposited by changing the geometry of the growth chamber for the graded gallium nitride layer.

9. (PREVIOUSLY AMENDED) The semiconductor film of claim 8, wherein changing the geometry of the growth chamber comprises moving the silicon substrate relative to injectors of the growth chamber.

10. (CANCELLED)

11. (PREVIOUSLY AMENDED) The semiconductor film of claim 1, wherein the initial composition comprises substantially at least a 20% aluminum composition.

12. (PREVIOUSLY AMENDED) The semiconductor film of claim 1, wherein the initial composition is aluminum nitride or an aluminum content aluminum gallium nitride where the aluminum content comprises substantially at least 20%.

13. (PREVIOUSLY AMENDED) The semiconductor film of claim 1, wherein the final composition comprises substantially less than a 20% aluminum composition.

14. (PREVIOUSLY AMENDED) The semiconductor film of claim 1, wherein the final composition is gallium nitride or an aluminum content aluminum gallium nitride where the aluminum content comprises substantially less than 20%.

15. (ORIGINAL) The semiconductor film of claim 1, further comprising at least one additional layer disposed on the graded gallium nitride layer.

16. (PREVIOUSLY AMENDED) The semiconductor film of claim 35, wherein at least one other element is introduced into the growth chamber for the graded gallium nitride layer causing no abrupt variations in the varying composition of the graded gallium nitride layer.

17. (ORIGINAL) The semiconductor film of claim 16, wherein the other element is silicon, indium or arsenic.

18-34 (WITHDRAWN)

35. (PREVIOUSLY ADDED) The semiconductor film of claim 1, wherein the graded gallium nitride layer is formed from a supply of at least one precursor in a growth chamber without any interruption in the supply.

36. (CANCELLED)

37. (Re-instated - formerly claim 3) The semiconductor film of claim 1, wherein the graded gallium nitride layer has a net compressive stress.

38. (PREVIOUSLY ADDED) The semiconductor film of claim 1, wherein the graded gallium nitride layer has a net stress below a stress required for crack generation in the graded gallium nitride layer.

39. (PREVIOUSLY ADDED) The semiconductor film of claim 38, wherein the stress required for crack generation is less than about 400 Mpa in tension.